1. A piste-maintenance tracklaying vehicle comprising a vehicle control unit and an internal combustion engine which is drivingly connected via a gear to a drive sprocket of at least one track, and accessory drives for additional devices that are mountable on said tracklaying vehicle, and/or for vehicle components, such as a tilting device for platform and driver's cab or track tensioner, with an internal combustion engine being connected via a generator and at least one electric motor and a gear to each drive sprocket, and in overrun mode an electric motor being switchable as a current generator for accessory drives designed as electrohydraulic or electric drives, wherein at least said electric drive for a shaft of said additional device is electrically synchronized with the electric motor of said drive sprocket through the vehicle control unit.

2. The tracklaying vehicle according to claim 1, wherein each drive sprocket is drivingly connected to a separate electric motor.

3. The tracklaying vehicle according to claim 1, wherein the planetary gear is arranged between the electric motor and the drive sprocket.

5. The tracklaying vehicle according to claim 1, wherein said tracklaying vehicle is designed with an energy buffer fed by said generator or by said electric motor which operates as a generator.

6. The tracklaying vehicle according to claim 1, wherein said tracklaying vehicle further comprises an electronic high-performance means for controlling travel engines or motors and/or accessory drives.

7. The tracklaying vehicle according to claim 1, wherein said internal combustion engine comprises an electronic engine control.

9. The tracklaying vehicle according to claim 6, wherein said electronic high-performance means is centrally arranged in said tracklaying vehicle for distributing energy to all consumers and for energy feedback.

10. The tracklaying vehicle according to claim 1, wherein all components of said tracklaying vehicle are composed in the manner of modules.

17. The tracklaying vehicle according to claim 6, wherein a heating means of said tracklaying vehicle is fed with waste feed from the motors of the hydraulic system and/or said electronic high-performance means.

18. The tracklaying vehicle according to claim 6, wherein said tracklaying vehicle comprises at least one setpoint transmitter for at least the desired traveling speed.

19. The tracklaying vehicle according to claim 18, wherein said electronic high-performance means or a vehicle control unit, respectively, is connected to said setpoint transmitter and comprises an electronic evaluation means at least for determining consumption-optimum speeds for said internal combustion engine.

22. The tracklaying vehicle according to claim 18, wherein said setpoint transmitter is designed as an accelerator for controlling speed and for braking purposes.

23. The tracklaying vehicle according to claim 18, wherein a predetermined setpoint is a setpoint of the electric motor speed.

24. The tracklaying vehicle according to claim 23, wherein the setpoint is convertible by the electronic means into a speed which is predetermined for said internal combustion engine.

25. The tracklaying vehicle according to claim 6, wherein said electronic means comprises a characteristics control unto for determining the consumption-optimum speed.

26. The tracklaying vehicle according to claim 1, wherein said vehicle has a safety logic for starting and stopping purposes, said logic sensing at least the position of a traveling direction switch, the actuation of said accelerator and of said parking brake.

28. The tracklaying vehicle according to claim 1, wherein the additional devices may be selected from a rotary snow plow or a front snow blower.

vehicle is prevented from rolling by means of power-supplied electnc motors, the accelerator is operated and the piste-rnaintenance vehicle is moved in the end. In a development of the invention, the parking brake is operated automatically, a release of the parking brake being effected during start upon operation of the accelerator.

A stopping operation during uphill or downhill driving is effected by means of a safety logic in that in successive order the accelerator position is moved to the zero position, whereby the piste-maintenance vehicle is slowed down in a controlled manner and stopped, the vehicle is prevented from rolling by a further power supply to the electric motors, the parking brake is automatically operated after a defined stopping time, and the power supply to the electric motors is terminated and the internal combustion engine is further operated in the idling speed mode. The traveling direction switch can then be moved to the neutral position.

The above-described control by means of a setpoint or by means of the safety logic can be performed through a separate electronic control means or an electronic means contained in the vehicle control unit or the electronic high-performance means.

Advantageous embodiments of the present invention will now be explained and described in more detail with reference to the figures attached to the drawing, in which:

Fig. 1 is a block diagram regarding drive and supply of a tracklaying vehicle;

Fig. 2 shows various variants of arranging electric motors and gears;

Fig. 3 is a side view of a first embodiment of a tracklaying vehicle;

Fig. 4 is a side view of a further embodiment of a tracklaying vehicle of the invention; and

Fig. 5 is a side view of a further embodiment of a tracklaying vehicle of the invention.

Fig. 1 is a block diagram for drive and supply with additional devices and further vehicle components.

An internal combustion engine 2 is drivingly connected to a generator 10 for producing electric energy. Furthermore, the internal combustion engine 2 drives a dynamo 27 by which a corresponding vehicle battery 26 can be charged.

An electronic high-performance means 21 which can be fed with current from the generator 10 is centrally arranged in the tracklaying vehicle 1, of which Fig. 1 only shows the principle. The electronic high-performance means 21 controls downstream electric motors 11, 12 for driving the tracklaying vehicle 1. These motors are drivingly connected via corresponding gears 3,13,14 to the drive sprockets 4 of the tracks of the tracklaying vehicle 1.

Energy and information flows between the individual components are represented in Fig. 1 by the directions of arrows. For instance, energy flows from the electronic high-performance means 21 via the electric motors 11, 12 and gears 3,13,14 to the drive sprockets 4. During downhill driving or in the overrun mode the drive sprockets 4 inversely drive the electric motors 11, 12 via the gears 3,13,14 so that these motors can be used as generators and feed energy back via the electronic high-performance means 21.

Furthermore, there is provided a vehicle control unit 28 which on the basis of corresponding predetermined setpoints of accelerator 29 and steering wheel 30 controls as a setpoint transmitter both the internal combustion engine 2 and the electronic high-performance means 21 and transmits the setpoints as control

components, there is maximum freedom of design by virtue of the electrical connection of said components; as a consequence, it is possible to arrange the drive train on the tracklaying vehicle in different ways. In the illustrated embodiment, the electric motor 11 is directly assigned to the drive sprocket 4 which drives a track 5.

The tracklaying vehicle 1 comprises as further vehicle components 15, 16 a loading platform 31 and a driver's cab 32. These parts are tiltable by electric or electrohydraulic drives 52.

A control block 22 and 23, respectively, is arranged at the front and at the rear of the tracklaying vehicle 1. By analogy with Fig. 1, the block is designed with an electrohydraulic drive 18 as the accessory drive 6. These control blocks 22, 23 serve, for instance, to operate an adjusting means for push frame, or device carrier, which are not illustrated for the sake of simplicity. Reference numerals 9 and 18a outline only the principle of a front snow plow blower to be arranged on the corresponding front device carrier 18a of the tracklaying vehicle 1.

The vehicle control unit 28 and a diagnosis means 25 are arranged inside the driver's cab. The diagnosis means serves maintenance and inspection purposes. The diagnosis means can also be arranged at a different location of the tracklaying vehicle 1.

Fig. 4 is a side view illustrating a further embodiment of a tracklaying vehicle 1. Like reference numerals designate like parts and are only mentioned in part.

At the rear of the tracklaying vehicle 1, a rotary snow plow with a downstream smoothing blade is arranged as an additional device 8. The snow plow comprises a shaft which is driven by an electric drive 19. The additional device 8 is adjustably and

pivotably supported at the rear of the tracklaying vehicle 1 via a corresponding kinematic adjusting means with electrohydraulic drive 18.

The kinematic adjusting means for the additional device 8 can be operated via the rear control block 23, the electrohydraulic drive 18 being contained in the rear control block 23 in such a case.

A winch which comprises a reel with an electric drive 19 is arranged as a further additional device 7 on the loading platform 31.

Further additional devices or vehicle components, such as track tensioner 56, parking brake 58, snow plow blower 62 or the like, are shown in Figs. 3, 4 and 5.